PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-003618

(43)Date of publication of application : 07.01.2000

(51)Int.Cl. H01B 1/08
C01G 19/00
H05K 9/00

(21)Application number : 10-164814

(22)Date of filing : 12.06.1998

(71)Applicant : DOWA MINING CO LTD

(72)Inventor : SUZUKI KAZUNARI
TSUKAGUCHI NOBUYOSHI
NAGATA CHOJU

(54) TIN-DOPED OXIDE INDIUM POWDER AND ITS MANUFACTURE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide transparent conductive powder exhibiting higher conductivity in a high transparency region, and to provide a manufacturing method thereof not needing firing in a strong reducing atmosphere as in the past.

SOLUTION: This tin-doped oxide indium powder comprises powder having an Sn content of 0.1 to 30 wt.% in terms of SnO2, a specific surface area of 15 m2/g or more, and grain sizes ranging from 10 to 30 nm, and exhibits specified color tone, crystallinity, volume solid resistivity, and zeta-potential. In this method, a bivalent soluble tin compound, in particular, is used for a starting tin material for doping, an ammonium carbonate is added to, and mixed with a mixed acidic liquid of the tin compound and an indium compound, thereby obtaining a coprecipitation hydroxide, which is fired in a nitrogen atmosphere while humidity is adjusted, and the fired material is pulverized to obtain powder.

LEGAL STATUS

[Date of request for examination] 27.04.2005

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office

* NOTICES *

JPO and NCIPI are not responsible for any
damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]
[Claim 1] Tin dope indium oxide powder with which Sn content is characterized by color tones being x values of 0.280-0.370, and y value of 0.316-0.400 on xy chromaticity diagram at 0.1 - 30 % of the weight by SnO2 conversion.
[Claim 2] Tin dope indium oxide powder characterized by the F-potential which Sn content measured in 0.01molKCl water solution at 0.1 - 30 % of the weight by SnO2 conversion being +5mV or more.
[Claim 3] Tin dope indium oxide powder with which specific surface area is characterized by the rate of volume resistivity being below 3x101-ohmcm in the condition of the green compact which the Maine peak half peak width near 2 theta= 30.5 degree fabricated [particle size / 10-30nm] by the pressure of 200kg/cm2 by 0.2 degrees - 0.7 degrees on the X diffraction Fig. above 15m2/g.
[Claim 4] The manufacture approach of the tin dope oxidization Inn Jim powder characterized by making it back-dry and calcinating this coprecipitation hydroxide at 500-800 degrees C by the inert gas ambient atmosphere containing moisture which the ammonium carbonate was added [ambient atmosphere] to the acidic solution which dissolved an indium and divalent tin, and made it generate the coprecipitation hydroxide of an indium and tin.
[Claim 5] The manufacture approach of the tin dope indium oxide powder according to claim 4 characterized by supply of the inert gas ambient atmosphere containing said moisture being a flow rate more than 1.0 ml/min-g (per-minute amount of supply per 1g of desiccation coprecipitation hydroxides).

[Translation done.]